

REMARKS

Claims 1, 2, 16-54, 60-68, and 76-97, which were not elected pursuant to the Restriction Requirement mailed April 15, 2005, are now cancelled without prejudice. Applicants reserve the right to pursue claims similar or identical to these claims in one or more applications claiming priority to the instant application.

Claim 13 has been rewritten slightly for clarity. This amendment is non-narrowing. No new matter has been added.

Claims 3-15, 55-59, and 69-75 are now pending for examination.

Claim Objections

Claim 13 has been objected to because "away from surface" in line 3 is considered by the Patent Office to be grammatically incorrect.

Applicants have rewritten claim 13 to address this issue. Withdraw of the objection is therefore respectfully requested.

Rejections under 35 U.S.C. §112, ¶2

Claim 13 has been rejected under 35 U.S.C. §112, ¶2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Patent Office states that claim 13 is unclear regarding which element has hydrophobic or hydrophilic functionality.

Claim 13 has been rewritten to address this issue. Accordingly, withdrawal of the rejection of claim 13 is respectfully requested.

Double Patenting

In addressing the double-patenting rejection, the Applicants do not concede that is proper to apply a "one-way test" rather than a "two-way test." However, it is believed that even with a one-way test (that is, assessing the pending claims in view of the claims of Clem), it is shown that the rejection is improper, and thus it is not necessary to address the issue of whether a two-way rejection is required or whether, with application of the two-way test, the rejection can stand. The

Applicants reserve their right to approach this rejection according to the two-way test, if appropriate, in this or future prosecution or other matters.

Claims 3-15, 55-59, and 69-75 have been rejected under the judicially-created doctrine of obviousness-type double-patenting as being unpatentable over claims 1-32 of Clem, *et al.*, U.S. Patent No. 6,518,168 ("Clem"), in view of Clark, *et al.*, U.S. Patent No. 4,728,591 ("Clark"). The Patent Office states that it would have been obvious to modify the self-assembled monolayer of Clem to have first and second materials terminating at an end away from a surface, because Clark teaches a pattern self-assembled monolayer that has this design.

At the outset, the Patent Office improperly, and over-generally characterizes Applicant's claims. Each of the claims as pending includes at least one recitation different from the general characterization as provided by the Patent Office. Each claim should be referred to independently for interpretation of proper recitation. Relevant claim recitations, different from the generalized characterization of the Patent Office, are noted below where necessary for addressing this rejection.

Applicants' Claims 3- 15

With respect to independent claim 3, it is not seen how any of the claims of Clem render obvious this claim. In Clem, independent claim 1 is directed to a method of providing a substrate having a self-assembled monolayer (SAM) and an indentation "essentially free of the self-assembled monolayer." There is no suggestion that a second SAM of a second molecular species can be included in the method or that the indentation be modified to include a second SAM. In fact, as claim 1 teaches that the indentation be "essentially free" of a SAM, claim 1 actually teaches away from a second SAM. As claim 1 of Clem teaches away from a second SAM, it is not seen how this claim of Clem can be relied upon as a basis for an obviousness combination directed at Applicants' claim 3, and where motivation would exist to make a modification based on Clark, that is, how Clark can be relied upon to cure the deficiencies of Clem. And as claim 1 of Clem teaches away from a second SAM, and no such second SAM is recited in claims of Clem depending from claim 1, none of claims 1-14 of Clem can render obvious pending claim 3. Since pending claims 4-15 depend from claim 3, all of claims 3-15 are believed to be free of a legitimate obviousness-type double-patenting rejection on the basis of claims 1-14 of Clem, alone or in combination with art relied upon by the Patent Office.

Independent claim 15 of Clem teaches the use of an applicator having a CVD blocking agent and using chemical vapor deposition. There is no recitation or suggestion of two SAMs, as recited in instant claim 3. Since the invention, as recited in dependent claim 17 of Clem, involves depositing material via CVD to a second portion of the surface (the first portion blocked by the CVD blocking agent of claim 15, described as a SAM in dependent claim 16), there is a teaching away of two SAMs as recited in Applicants' claim 3, since the use of this two SAM arrangement would seem inconsistent with Clem's technique of depositing material via CVD to the second portion of the surface. Given this teaching away in claims 15 and dependents of Clem, it is not seen how these claims of Clem can be relied upon as a basis for an obviousness combination directed at Applicants' claim 3, and where motivation would exist to make a modification based on Clark, that is, how Clark can be relied upon to cure the deficiencies of Clem. Thus, none of claims 15-23 of Clem can render obvious pending claim 3. Since pending claims 4-15 depend from claim 3, all of claims 3-15 are believed to be free of a legitimate obviousness-type double-patenting rejection on the basis of claims 15-23 of Clem, alone or in combination with art relied upon by the Patent Office.

Independent claim 24 of Clem recites placing a self assembled monolayer blocking agent on a first portion of a surface, leaving a second portion of the surface free of the SAM, and applying a sol-gel precursor to the second portion of the surface. This claim, with recitation of the second portion of the surface free of the SAM, teaches away from the two SAM arrangement of Applicants' claim 3, and none of Clem's dependent claims 25-31 leads to a different conclusion. Given this teaching away in claims 24 and dependents of Clem, it is not seen how these claims of Clem can be relied upon as a basis for an obviousness combination directed at Applicants' claim 3, and where motivation would exist to make a modification based on Clark, that is, how Clark can be relied upon to cure the deficiencies of Clem. Thus, none of claims 24-31 of Clem can render obvious pending claim 3. Since pending claims 4-15 depend from claim 3, all of claims 3-15 are believed to be free of a legitimate obviousness-type double-patenting rejection on the basis of claims 24-31 of Clem, alone or in combination with art relied upon by the Patent Office.

Independent claim 32 of Clem is directed to depositing material (via CVD or sol-gel processing) on a surface, a first portion of which comprises a SAM, and removing material from the first portion of a surface while allowing the material to remain on a second portion. This claim

teaches away from the two SAM arrangement of Applicants' claim 3 since it is not seen how, in claim 32, material deposited via CVD or sol-gel processing to the second portion of the surface would be allowed to remain with selected removal of the same from the first portion. Given this teaching away in claim 32 of Clem, it is not seen how this claim of Clem can be relied upon as a basis for an obviousness combination directed at Applicants' claim 3, and where motivation would exist to make a modification based on Clark, that is, how Clark can be relied upon to cure the deficiencies of Clem. Thus, claim 32 of Clem can not render obvious pending claim 3. Since pending claims 4-15 depend from claim 3, all of claims 3-15 are believed to be free of a legitimate obviousness-type double-patenting rejection on the basis of claim 32 of Clem, alone or in combination with art relied upon by the Patent Office.

Applicants' Claims 55-59

With respect to independent claim 55, it is not seen how any of the claims of Clem render obvious this claim. Applicants' independent claim 55 recites "an article defining a surface comprising palladium; and a self-assembled layer of a molecular species on the surface defining a pattern, *the pattern corresponding to a pattern of an applying surface able to direct formation of the pattern of the monolayer of the molecular species on the surface* (emphasis added).

Although an analysis of Applicants' claim 55, and dependent claims 56-59, as compared to each of claims 1-32 of Clem has been carried out, it is not believed necessary to go into the level of detail in discussing Applicants' pending claims 55-59 as that provided above with respect to Applicants' pending claims 3-15. Nowhere in any of the claims of Clem is there found a recitation of a molecular species on a surface defining a pattern *corresponding to a pattern of an applying surface* able to direct formation of the pattern of the molecular species on the surface. Nowhere is there found any teaching or suggestion in Clark that would cure this deficiency of Clem. Accordingly, claims 55-59 are believed to be free of a legitimate obviousness-type double patenting type rejection on the basis of claims 1-32 of Clem, alone or in combination with art relied upon by the Patent Office.

Applicants' Claims 69-75

As is the case with the discussion above concerning claims 55-59, Applicants have carefully reviewed claim 69 and dependent claims 70-75 as compared with all of claims 1-32 of Clem in view

of Clark. Without going into a detailed analysis as performed above with respect to Applicants' claims 3-15, it is believed that the rejection on this ground is improper as well.

Applicants' independent claim 69 recites, *inter alia*, "... an article defining a surface comprising palladium; an isolated region of a ... species on the surface, the isolated region including a lateral dimension of less than 200 microns."

Only in claim 18, including the limitations of claims 17 and 15 of Clem, is palladium recited. Nowhere in this claim, or in any claim of Clem, is there any recitation of any species on a surface including a lateral dimension of less than 200 microns. Claim 18 of Clem recites, including limitations of base claim 15 and intervening claim 17, essentially:

18. A method comprising:
 - providing an applicator having a CVD blocking agent;
 - contacting the applicator with at least one portion of a surface of an article;
 - transferring the CVD blocking agent to the at least one portion of a surface of an article from the applicator; and
 - exposing the surface to chemical vapor deposition conditions, involving allowing material to be deposited via chemical vapor deposition on a second portion of the surface contiguous with the first portion and removing the self-assembled monolayer thereby creating a pattern on the surface including material deposited on the second portion and the surface at the first portion remaining free of material,
- wherein the material is selected from the group consisting of ... palladium.

It is not seen how a proper obviousness combination is made between claim 18 of Clem and the disclosure of Clark. Applicants have carefully reviewed the specific sections of Clark pointed out by the Patent Office in forming this rejection. In this regard, "transfer a pattern" as recited at column 2, line 43, is conventional language which those of ordinary skill in the art would understand to mean passing material through holes formed in the array to sections of the surface not covered by the initial array.

Given that claim 18 of Clem describes transferring a CVD blocking agent from an applicator to a surface, the combination with Clark is improper. Specifically, it is not seen why one of ordinary skill in the art would turn to the technique of Clark since it would not be needed. In fact, the technique of Clem as recited in claim 18, and the technique of Clark as disclosed, would seem to

be inconsistent or even possibly mutually exclusive with respect to each other. At the least, it is not seen how motivation to combine the two would exist.

No other claim of Clem, or disclosure of Clark is pointed out by the Patent Office or observed by Applicants to be motivated for combination in a way that would result in Applicants' claim 69. Since pending claims 70-75 depend from claim 69, all of claims 69-75 are believed to be free of a legitimate obviousness-type double patenting rejection on the basis of any claims of Clem, alone or in combination with art relied upon by the Patent Office.

Rejections under 35 U.S.C. §102(b)

Claims 3-10 and 69-75 have been rejected under 35 U.S.C. §102(b) as being anticipated by Clark.

It is not seen where in Clark is there a disclosure or a suggestion of a self-assembled monolayer, as is recited in independent claim 3. While Clark discloses a self-assembled molecular array on a surface, which can contain holes through which material can be deposited, Clark discusses arrays of, e.g. proteins and deposition of, e.g., protein or metal. With only the disclosure of Clark, it is not believed that a self-assembled monolayer would result, as recited in claim 3. Note that the self-assembled molecular array disclosed in Clark exhibits "density, thickness, and/or chemical reactivity variations (col. 2, lines 36-37)," and this would appear to be inconsistent with a self-assembled monolayer. See also col. 3, lines 51-59. Accordingly, it is believed that Clark does not disclose or suggest a self-assembled monolayer, let alone an isolated region of a self-assembled monolayer of a first molecular species on a surface that is surrounded by a continuous region of a self-assembled monolayer of a second molecular species on a surface, as recited in claim 3.

With respect to independent claim 69, Applicants do not see where in Clark is there a disclosure or a suggestion of an article defining a surface comprising palladium. In fact, Applicants do not see where in Clark does the word "palladium" or the symbol "Pd" appear.

Thus, it is believed that independent claims 3 and 69 are not anticipated by Clark, and it is respectfully requested that the rejection of these claims be withdrawn. The remaining claims depend, either directly or indirectly, from independent claims 3 or 69, and are believed to be

allowable for at least the above-mentioned reasons. Withdrawal of the rejection of these claims is also respectfully requested.

Rejections under 35 U.S.C. §103(a)

Claims 11-15 and 55-59 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Clark in view of Schnur, *et al.*, U.S. Patent No. 5,077,085 ("Schnur").

Claims 11-15 each depend, directly or indirectly, from independent claim 3. For at least the reasons explained above with respect to the rejection of claim 3 under §102(b) in view of Clark, the premise of the rejection of claim 3 (that Clark teaches all of the limitations of claim 3) is believed to be incorrect. Accordingly, while Applicants do not concede that there would have been any suggestion or motivation to combine Clark with Schnur in the manner suggested in the Office Action, the present rejection cannot stand. Thus, withdrawal of the rejection of claims 11-15 is respectfully requested.

With respect to claims 55-59, it is not seen where in either Clark or Schnur is there a disclosure or a suggestion of a surface comprising palladium, as recited in independent claim 55. Nowhere does the word "palladium" nor the symbol "Pd" appear in Clark, as previously mentioned. While Schnur discloses "palladium," it is in the context of a colloidal catalytic precursor (see, e.g., claim 6, or col. 6, lines 55-59) that adheres to a surface, rather than forming a part of a surface onto which a self-assembled layer of a molecular species defining a pattern is provided, as recited in claim 55. Thus, it is believed that the combination of Clark and Schnur, to the extent these references can be combined (which Applicants do not concede), would not render obvious independent claim 55. Thus, it is respectfully requested that the rejection of claim 55 be withdrawn. Claims 56-59 depend, directly or indirectly, and are believed to be allowable for at least these reasons. Withdraw of the rejection of these claims is also respectfully requested.

CONCLUSION

The Applicants' remarks above concerning U.S. patent 6,518,168 (Clem et al.) are directed purely to the Patent Office's improper obviousness combination of the claims of Clem with the disclosure of U.S. patent 4,728,591 (Clark et al.). These comments are not intended to have any

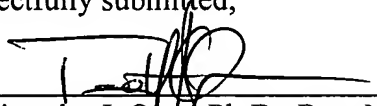
bearing, nor should they have any bearing, on any interpretation of the meaning and/or scope of the claims of U.S. patent 6,518,168.

In view of the foregoing, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this response, that the application is not in condition for allowance, the Examiner is requested to call the undersigned at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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